



What is I B S?

IBS, the Intercollegiate Broadcasting System, is an association* of college campus broadcasting stations. Its purpose is to pool the resources of these stations to meet their common problems. It is not limited to any one area, but now has reached from coast to coast in the United States and into Canada. About three thousand people work on the student staffs of IBS stations, and over one-hundred fifty thousand are reached by their broadcasts.

It all started at Brown University in 1936 when students George Abraham and David Borst began exchanging programs over a wire between their rooms. They experimented with the transmission of a radio signal over wires to reach specific, limited reception areas, and out of that experiment grew all of today's campus stations. Other colleges quickly picked up the idea and by 1940 there were 13 stations - enough to found the Intercollegiate Broadcasting System. IBS has been the spokesman and clearing house of campus radio ever since, with the same two founders among its chief executives.

Who Belongs?

IBS stations are broadcasting stations whose reception area is limited to the college campus and associated buildings. (The terms "carrier-current," "wired radio," and limited-area broadcasting" are variously used to describe this form of transmission. We prefer the latter). They are operated largely by students and are organized as as extra-curricular activities. A list of the stations now in operation and under construction is included in this booklet.

Is it Legal?

Of course. IBS stations operate under Rule 2.102 of the Federal Communications Commission which specifies that the maximum field strength of the radio signal must not exceed fifteen microvolts per meter (inaudible on an ordinary receiver) at any point at a distance of λ (the wave length) divided by 2π from the nearest part of the transmission system. For frequencies in the lower portion of the broadcast band, such as campus stations use, this distance is around 200 feet. The transmission system may include wire lines installed by the station or leased from others, and power lines into which the signal is coupled. Since the signal is carried by these mediums to the specific locations where reception is desired, no interference is caused to distant broadcast stations on the same frequencies, and because of their compliance with the above cited rule, campus stations are exempt from many of the provisions of FCC licensing procedure. For example, licensed operators are not required to operate the station, and the station itself need not be licensed by the Commission. The call letters of campus stations are assigned by the Commission, however, and all stations of the System are registered with them. The IBS maintains an office in Washington to cooperate actively with the Commission and to represent all campus stations before them.

How do stations work together?

Campus stations in different colleges cooperate through the Intercollegiate Broadcasting System. Information on all phases of radio is collected in the IBS offices in New York, Washington, and Schenectady, N.Y., and is incorporated in the many books, booklets, magazines, and newsletters that IBS publishes. Similarly, there are meetings of campus station personnel in different regions, and a national convention once a year when panel meetings are

*A non-profit Corporation under the laws of Rhode Island (where IBS was founded)

held on many aspects of campus radio and experts from professional radio speak and participate.

A group of alumni experienced in different phases of radio are always available to advise stations on difficult problems, and the experience of each station is made available to all. Free consultation is available on all the technical aspects of radio, including engineering, audience research, business administration, program structure, and personnel training.

IBS maintains script and transcription libraries on which any station may draw, and exchanges programs among its members by script, transcription, network lines leased from the telephone companies, and short wave radio.

IBS operates networks of campus stations, setting them up wherever the concentration of stations is sufficient to make their operation practicable. These regional networks are connected into larger groups at certain hours, and programs of general interest from the member stations are circulated. Isolated stations receive network programs on transcriptions.

What about programs?

Most IBS stations follow the tested schedule of popular music, disc jockeys and specialized musical programs in the early evening; feature programs, including network presentations, from 8:00 to 10:00 and music, mostly symphonic, after 10:00. Most stations operate from 7:00 to 11:00 on weekdays. Larger stations run additional hours before and after this period.

Programs and promotion are directed toward the interests and preferences of the specialized student audience. News of activities in colleges receives detailed coverage in newscasts, both local and network, and in documentary programs. College sports are covered by extensive reporting as well as play-by-play broadcasts. Feature programs are made up with college interests in mind.

A continuing program of audience research on a national scale makes available information on the listening habits and preferences of the student audience, which is collected, analysed, and published by IBS.

The program policy of the System is dedicated to the circulation of the best work of member stations in all fields of radio programming, to provide for each station a well-rounded service of programs especially designed for the campus audience and not available elsewhere. In network and syndicated programs, emphasis is placed on material which individual stations cannot practicably produce locally, particularly news, international features, and programs featuring nationally known figures.

Who runs it?

Each member station of IBS has a student staff with from four to a dozen officers who are elected or appointed in accordance with prevailing practice at that college. Each station has a faculty advisor or advisory committee.

These organizations, in turn, run the national System. Each full member station has a vote in determining the policies of the System and electing the Board of Directors. Full membership is open to organizations operating campus radio stations on a non-profit basis (either commercially or non-commercially) if they conform to the Codes of Practice of the System and are authorized by the administration of the college. Full members support the activities of IBS by the payment of dues proportional to their income.

Trial Status is open to organizations with campus stations under construction. Groups "on trial" are provided with technical and organizational information and advice, but programs and programming material are not available to them. This status is extended free of charge, but is applicable only as long as a station is actually under construction or in the process of organization.

Affiliate Status is available to radio workshops and similar organizations which produce programs but do not own or operate broadcast facilities, and to college-operated standard AM or FM stations designed to serve the general public.

Facilities required:

The equipment used by campus stations is similar to that used by standard broadcast stations, but transmitter power is much lower and the signal is carried by a transmission system to the listening area.

Studio equipment may be purchased from the manufacturers who serve the radio industry, and IBS has published recommendations on this equipment. Considerable savings may be effected by using equipment built by students from designs published by IBS. In any event, the station's transmitter will have to be built to order, either by students or by a radio engineer.

The transmission system is the key to the design problem. It is determined by the requirements of the campus, and must be designed individually for each college. The transmission system, in turn, determines the size and type of transmitter required.

Further information and consultation is available from.....

The Intercollegiate Broadcasting System, 507 Fifth Avenue, New York 17, N.Y.

INTERCOLLEGIATE BROADCASTING SYSTEM

Member Stations - August 1947

<u>Call</u>	<u>College or University</u>	<u>Location</u>
WABP	Alabama, University of	University, Alabama
KBYU	Brigham Young University	Provo, Utah
✓WBRU	Brown University	Providence, Rhode Island
✓WBMC	Bryn Mawr College	Bryn Mawr, Pennsylvania
WVBU	Bucknell University	Le wisburg, Pennsylvania
WCIT	Carnegie Institute of Technology	Pittsburgh, Pennsylvania
WKCR	Columbia University	New York, New York
✓WHUS	Connecticut, University of	Storrs, Connecticut
✓WVBR	Cornell University	Ithaca, New York
WGTB	Georgetown University	Washington, D. C..
WHC	Hamilton College	Clinton, New York
WHCN	Harvard University	Cambridge, Massachusetts
✓WHRC	Haverford College	Haverford, Pennsylvania ✓
KUOI*	Idaho, University of	Moscow, Idaho
WMAC	MacMurray College	Jacksonville, Illinois
WMWC	Mary Washington College	Fredericksburg, Virginia
WNCS	North Carolina State College	Raleigh, North Carolina
WOUN	Ohio University	Athens, Ohio
WONC	Olivet Nazarene College	Kankakee, Illinois
KAEQ	Pacific, College of the	Stockton, California
WXPB	Pennsylvania, University of	Philadelphia, Pennsylvania
WPRU	Princeton University	Princeton, New Jersey
✓WRAD	Radcliffe College	Cambridge, Massachusetts
KSLI	St. Lawrence University	Canton , New York
KWWC	Stephens College	Columbia, Missouri
✓WSRN	Swarthmore College	Swarthmore, Pennsylvania
WRTC	Trinity College	Hartford, Connecticut
WRUC	Union College	Schenectady, New York
✓WBS	Wellesl ey College	Wellesl ey, Massachusetts
WES	Wesleyan Un iversity	Middletown, Connecticut
✓WMS	Williams College	Williamstown, Massachusetts ✓

*Non-commercial station

New Members and changes indicated in red

INTERCOLLEGIATE BROADCASTING SYSTEM

Trial and Affiliate Stations

August 1947

<u>Call</u>	<u>College or University</u>	<u>Location</u>	<u>Status</u>
WAMC	American University	Washington, D. C.	Trial
ABS	Antioch College	Yellow Springs, Ohio	Trial
WABC	Bard College	Annandale-on-Hudson, New York	Trial
	Baylor University	Waco, Texas	Trial
WVBN	Bethany College	Bethany, West Virginia	Trial
	Bowling Green State Univ.	Bowling Green, Ohio	Trial
	Clarkson College	Potsdam, New York	Trial
WVOB	Colorado State College of Ed.	Greeley, Colorado	Trial
WBVD	Connecticut, University of:		
	Fort Trumbull Branch	New London, Connecticut	Trial
	Denver, University of	Denver, Colorado	Trial
WECH	Emerson College	Boston, Massachusetts	Trial
WRWS	Endicott Union College	Beverly, Massachusetts	Trial
WWGC	Gettysburg College	Gettysburg, Pennsylvania	Trial
WHOV	Hampton Institute	Hampton, Virginia	Trial
KHSC	Humboldt State College	Arcata, California	Affiliate
WRFI	Illinois, University of	Urbana, Illinois	Trial
WKNO	Knox College	Galesburg, Illinois	Trial
WJRH	Lafayette College	Easton, Pennsylvania	Trial
WLRN	Lehigh University	Bethlehem, Pennsylvania	Trial
KELU	Loyola University	Los Angeles, California	Trial
WLIB	Manchester College	North Manchester, Indiana	Trial
WUOM	Maryland, University of	College Park, Maryland	Trial
	McGill University	Montreal, Quebec	Trial
WMUB	Miami University	Oxford, Ohio	Trial
	Mohawk College	Utica, New York	Trial
	Montana State College	Bozeman, Montana	Trial
WMST	Murray State Teacher's Coll.	Murray, Kentucky	Trial
KUVY	Oklahoma, University of	Norman, Oklahoma	Trial
WBSD	Olivet College	Olivet, Michigan	Trial
KTJO	Ottawa University	Ottawa, Kansas	Trial
KCVN	Pacific, College of the	Stockton, California	Affiliate
	Queen's University	Kingston, Ontario	Affiliate
	Rensselaer Polytechnic Inst.	Troy, New York	Trial
WHOE	Rhode Island State College	Kingston, Rhode Island	Trial
	Russell Sage College	Troy, New York	Affiliate
WRSU	Rutgers University	New Brunswick, New Jersey	Trial
WUSC	South Carolina, University of	Columbia, South Carolina	Trial
KSMU	Southern Methodist University	Dallas, Texas	Trial
KSU	Stanford University	Stanford University, Calif.	Trial
	Texas College of Mines	El Paso, Texas	Trial
	Texas State College for Women	Denton, Texas	Trial
WUVA	Virginia, University of	Charlottesville, Virginia	Trial

Notes

Trial Groups....Campus stations contemplated or under construction

Affiliate.....Broadcasting or programming group not operating carrier-current campus station. Includes educational standard broadcast stations, educational FM stations, and radio workshops.

New members and changes indicated in red

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Directors and Staff

President: RUSSELL POTTER PhD.
Director, Institute of Arts and Sciences, Columbia University,
New York

Vice-President: ROGER CLIPP
General Manager, Station WFIL, Philadelphia

Secretary: JUDITH WALLER
Director, Public Service Department, National Broadcasting
Company, Chicago

Treasurer: GUY DELLA CIOPPA
Assistant to Chairman of the Board, Columbia Broadcasting System,
New York

Directors: R. R. LOWDERMILK PhD.
Educational Radio Specialist, United States Office of Education,
Washington, D.C.

MORRIS NOVIK
Public Service Radio Consultant; Executive Secretary, National
Association of Educational Broadcasters, New York

ROBERT B. HUDSON
Director of Education, Columbia Broadcasting System, New York

Executive Officers:

GEORGE ABRAHAM, Executive Chairman
Founder of the first campus station and of IBS. Washington

DAVID BORST, Technical Manager
Co-founder of the first station. Schenectady, N.Y.

DAVID LINTON, Program Manager
Former manager of WSRN, Swarthmore. New York

PAUL YERGIN, Business Manager
Former manager of UCRS, Union College. New York

SONIA-JANE BROWN, Station Relations Manager
Former officer of WBRU, Brown. New York

Alan Rich, Music Director
Harriet Linton, Research Director
Kurt Shell, Director of International Broadcasts

Victor Rosenblum

City College of New York

Assistant Business Manager

Advisory Personnel

Herbert Barlow

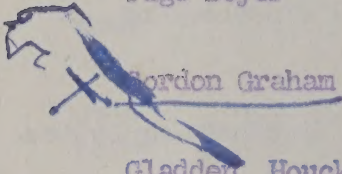
United States Patent Office
Washington

Audio Engineering

Page Boyer

Free-lance actor and director
New York

Production

Gordon Graham

Westinghouse Corporation
Boston

General Engineering

Gladden Houck Jr.

Sorenson Corp.
Stamford, Conn.

General Engineering

William R. Hutchins

Station WFMR (FM)
New Bedford, Mass.

Audio and Acoustical Engineering

Tak Kako

Columbia University
New York

Production

X Richard Kaye

Station WBIS
Boston

Audio Engineering

H. C. Robbins Landon

Musical Correspondent
(Europe)

Robert Mills

Radio Engineering

Clement Moritz

Philco Corporation
Philadelphia

Radio Engineering

F. John Pessolano Jr. University of Pittsburgh
Pittsburgh

Music, Drama

William Saunders

Station WTRY
Troy, New York

Programming

B. Sheldon Sprague

Celanese Corporation
New York

General Engineering

William Sullivan

Hedgerow Theatre
Moylan, Penna.

Drama

Howard E. Tompkins

University of Pennsylvania
Philadelphia

Audio and Acoustical Engineering

William Tuller

Los Alamos, New Mexico

General Engineering

Thomas J. Wertenbaker Jr. Station WNBH
New Bedford, Mass.

Management

Joel Chaseman

Station WSCR
Scranton, Penna

Popular Music

CONSTITUTION

of the

INTERCOLLEGIATE BROADCASTING SYSTEM

Article I

The name of this organization shall be the Intercollegiate Broadcasting System, Incorporated.

Article II

The Intercollegiate Broadcasting System, Incorporated, shall be a non-profit corporation of college broadcasting and programming groups dedicated to mutual assistance and the furtherance of education, entertainment, and good will through radio.

Article III

Any broadcasting or programming group operated by or for the students of a college and sanctioned by the administration which it serves, and not operated for the profit of any individual or group of individuals, shall be eligible for membership in the Intercollegiate Broadcasting System, as follows:

1. Any such group in the process of organization, or with facilities under construction, shall, upon proper application, be granted Trial Status at the discretion of the Station Relations Manager.
2. Any eligible group shall, upon proper application, be granted Membership by the Executive Committee on the condition that it fulfills all membership requirements and is operating under all applicable codes.
3. Any group not eligible for Membership, whose purpose coincides in whole or in part with that of the Intercollegiate Broadcasting System, shall, upon proper application, be granted Affiliate Status by a two-thirds vote of the Governing Council.
4. All Members and Affiliates shall abide by applicable codes governing General, Business, Technical, and Program operation, adopted by the Governing Council.
5. Upon sufficient evidence that any Member or Affiliate has violated any applicable codes or other requirements, that group may be removed from membership by a two-thirds vote of the Governing Council.

Article IV

All authority within the Intercollegiate Broadcasting System shall reside in and derive from each Member broadcasting and programming group, through their representatives, to be known collectively as the Governing Council, as follows:

1. The Governing Council shall consist of one representative chosen by each Member group to serve a term to be determined by that group.

Article IV

2. The Governing Council shall meet once within the months of May, October, and December of each year, and at other times set by a one-thirds vote of the Governing Council.
3. Each Governing Council Representative shall have one vote..
4. The Governing Council Chairman shall be a representative and shall be elected by the Governing Council to serve for one meeting.
5. A quorum in meeting shall consist of two-thirds of the representatives, and through the mails of ballots returned by two-thirds of the representatives within twenty days of receipt. All questions before the Governing Council shall be decided by a majority unless elsewhere restricted.
6. Any representative may place new business before the Governing Council through the mails and receive a vote within thirty days.
7. The duties of the Governing Council shall be:
 - A. To legislate upon all matters Before the corporation.
 - B. To finance the corporation through equitable assessment of its members.
 - C. To carry out such other duties as are set forth in the Constitution or shall hereafter be decided by the Governing Council.

Article V

The Executive Committee shall transact all business as directed by the Governing Council and shall propose matters of policy to be subject to the approval of the Governing Council, as follows:

1. The Executive Committee shall consist of the Chairman, and the Managers of the following departments: Technical, Business, Program, Station Relations, and such other departments as shall be established by a two-thirds vote of all the representatives.
2. The members of the Executive Committee shall be elected by the Governing Council at each December meeting to serve a term of one year.
3. At each meeting of the Governing Council, the Executive Committee shall present to the Governing Council a complete report of its activities for the preceding period, and a prospectus of all activities and expenditures for the following period.
4. Any member of the Executive Committee may be removed from office by a two-thirds vote of the Governing Council in meeting.

Article VI

1. The Directors of the Corporation shall be:
 - a. Three members of the Executive Committee, elected by the Governing Council to serve a term of one year;
 - b. Nine persons, not undergraduates in any college nor members of the Executive Committee, elected by the Governing Council to serve a term of three years, three to be elected each year.

Article VI

2. The Directors of the Corporation shall meet annually in the month of December for the purpose of electing officers, and at such other times as they feel necessary to fulfill the duties listed below.
3. The Directors of the Corporation shall:
 - a. Receive, hold, and disburse all real and personal estate as the Executive Committee shall request at the discretion of the Governing Council;
 - b. Retain the seal of the Corporation and affix it to all instrument of the Corporation in the name of, and by the authority of the Governing Council;
 - c. Supervise the audit of all books of account and report annually on the state of the treasury to the Governing Council in meeting;
 - d. Advise the Executive Committee or the Governing Council upon any matter that the latter shall direct.

Article VII

1. The officers of the Corporation shall be the President, Vice-President, Secretary, and Treasurer.
2. These officers shall be elected by and from the Directors of the Corporation to serve a one-year term.
3. The duties of the Corporate officers shall be as follows:
 - a. The President shall fix the time and place of meetings of the Corporation and shall preside at such meetings;
 - b. In the absence of the President, the Vice-President shall assume his duties;
 - c. The Secretary shall have custody of the Seal and shall keep minutes of all meetings;
 - d. The Treasurer shall have custody of all corporate monies, securities, and properties.

Article VIII

1. Amendments to the Constitution shall be adopted by a three-quarters vote of the Governing Council, after at least one month has elapsed since their original proposal.
2. By-Laws to the Constitution shall be adopted by a majority vote of the Governing Council.
 - a. Each By-Law shall automatically lapse after a period of three years, unless re-affirmed by the Governing Council.

Article IX

This Constitution shall be adopted by a three-quarters vote of the Board of Governors of the Intercollegiate Broadcasting System, and shall take effect Monday, November 26, 1945; it shall be binding, together with all By-Laws and applicable codes hereafter attached, upon every Member and Affiliate; and it shall supersede the Constitution of the Intercollegiate Broadcasting System (adopted December 26, 1940), as amended, and all previous documents.

MEMBER STATION GENERAL CODE

The General, Business, Technical, and Program Codes drawn up and approved by the Governing Council shall be complied with fully at all times by Members; where applicable, by Affiliates; and as quickly as possible by groups with Trial Status.

1. Every member shall assume full responsibility for its acts and the acts in its behalf of individuals associated with it or under its direction.
2. Every member shall offer to all students of the institution which it serves who are equally qualified in effort, attitude, and ability, equal opportunity to join and participate in its activities.
3. No member shall distribute profit, pay dividends, or otherwise compensate persons associated with it except in the payment of reasonable fixed salaries for services rendered, or in the payment of loans with legitimate interest.
4. Every member shall have and adhere to a constitution registered with the Intercollegiate Broadcasting System and setting forth its objectives, organization, and policies, or shall reduce to writing such objectives, organization, and policies, and register the same with the Intercollegiate Broadcasting System.
5. All changes in the objects, organization, or policies of any member shall be registered in writing with the Intercollegiate Broadcasting System no more than 21 days after they become effective.
6. Every member operating a system which disseminates programs through the use of one or more carrier-current devices shall operate this system for the purpose of serving only college-owned buildings and other property associated with college life. Coverage of property other than this which results when the system is operated in accordance with the Technical Code is permissible. In no case shall the station be designed to cover such other property, nor be represented as able to do so.

PROGRAM CODE

✓ The station shall be responsible for all material broadcast over its facilities. The person responsible directly to the management of the station shall be in authority over every program.

2. News News shall be presented with fairness and accuracy, and the station shall certify itself of the reliability of its news sources. News shall not be presented in a biased manner, nor shall it be selected for the purpose of favoring or disfavouring either side of a public issue.

Editorializing and statement of opinion on the news shall be clearly differentiated from news reporting.

3. Race and Religion Stations shall not broadcast any material attacking any racial or religious group, or leading in any way to racial or religious discrimination.

4. Misrepresentation All forms of misrepresentation are forbidden. Rebroadcasts shall not be represented as original programs.

5. Profanity and Obscenity The Communications Act of 1934 provides "No person within the jurisdiction of the United States shall utter any obscene, indecent, or profane language by means of radio communications." Violation of this law is a Federal offense. Stations are required to take effective action to prevent the use of any material of doubtful propriety over their facilities, and shall take disciplinary action against any individual thus endangering the station.

✓ 6. Call letters No station shall broadcast in its own call letters of another station over its facilities. (The use of call letters in a dramatic program may be allowed, but should be avoided if possible).

7. Distress signals "No person within the jurisdiction of the United States shall knowingly utter or transmit, or cause to be uttered or transmitted, any false or fraudulent signal of distress or communication of distress." (Communications Act of 1934, Section 325)

8. Political Candidates If a station permits a candidate for public or quasi-public office to use the station for broadcasting campaign material, it shall provide equal opportunity to all other bona fide candidates. However, the station is under no obligation to permit the use of its facilities by anyone.

9. Sponsored Programs All sponsored programs shall be presented as such, and the name of the sponsor given at the time the program is broadcast, as provided in Section 317 of the Communications Act of 1934.

10. Length of Commercial Copy The length of commercial copy on all programs shall be limited to the following:

5 minute programs.....	1 minute 45 seconds
10 minute programs.....	2 minutes
15 minute programs.....	2 minutes 30 seconds
25 minute programs.....	2 minutes 45 seconds
30 minute programs.....	3 minutes
60 minute programs.....	6 minutes

Exception to the above shall be made in the case of "musical clock" programs and similar programs consisting of a number of short musical selections and advertisements for two or more sponsors. During such programs, musical selections shall not be interrupted for a commercial, nor more than one commercial shall be read between each selection and the next.

Programs over one hour in length shall be limited to six minutes per hour of commercial copy.

11. Control over Programs No commercial commitment of a station shall affect any program other than the one sponsored. No contract granting or implying any right of control or censorship over programs other than the one sponsored shall be acceptable.

if any, which are reserved for single programs. The station will also submit the dates on which it proposes to broadcast.

Each station shall notify NBS within a week of any change in the above block schedule.

13. Program Log Each station shall keep a program log listing the date, time, and type of program. The type of program shall also be indicated - for example, music, drama, variety, news, etc. - and whether the program is sponsored by a station or outside agency or commercial, and the sponsor's name.

It is recommended that a full production report be kept, listing each item in the program, the time it was broadcast, and the staff participating in the program.

14. File Log of Copy A copy log of the writing of every program shall be retained. It must include all corrections and changes, except for ad lib announcements.

15. Retention of Records The program log and the file copies of programs shall be retained for a period of one year from the date of broadcast, and shall be found.

✓ 16. Station Identification Station identification shall be made at the beginning of every program, at least once every hour.

✗ The recommended procedure is as follows: Each program shall end thirty seconds before the beginning of the following program. The station identification shall be made immediately following the system cue. The station identification shall be made by voice or by a system cue. In the case of a station announcement, the station identification shall be made at the end of the announcement. The station identification shall be made at the end of the program. The station identification shall be made at the end of the program. The station identification shall be made at the end of the program.

The above recommended procedure must be followed on all station programs.

17. Special Programs Special programs shall be identified as such at the beginning of the program. This applies to programs which are mostly pre-recorded. (However, special music used in broadcast programs need not be announced as such).

18. Compliance with other authorities Stations are responsible for seeing that all programs conform with the provisions of the Federal Trade Commission and other applicable authorities.

Stations shall obey all provisions of copyright law. This provides that no copyrighted literary or musical material may be used without permission of the copyright owner. (It is a violation of copyright, as well as Section 325 of the Communications Act, for a station to retransmit a program from another station or to transmit it over lines, without full permission of the station originating the program).

Libel and slander are legal offenses and are forbidden.

TECHNICAL CODE

All technical and specialized terminology employed herein is used in the meaning prescribed by the Federal Communications Commission in the "Standards of Good Engineering Practices;" no other definitions shall be construed to apply, and no other meaning shall be inferred.

Any station which operates or participates in the operation of a system disseminating programs through the use of one or more carrier-current devices shall adhere to the following technical regulations and standards of good engineering practice:

1. The carrier frequency of less than 540 nor more than 700 kilocycles per second shall be employed in such a manner that the carrier frequency chosen shall be an exact multiple of ten kilocycles per second.
2. The carrier frequency shall be regulated within 10 kilocycles per second of the carrier frequency employed by any standard station whose 100 microvolt per meter contour encloses any part of the service area of the station, or within 20 kilocycles per second of any station whose 500 microvolt per meter contour encloses any part of the service area of the station.
3. Radiation of the fundamental wave and all harmonic and spurious radiations shall not exceed 15 microvolts per meter at a distance of one wavelength divided by 2 pi from all conductors which make up the radio frequency transmission system.
4. Each system shall employ the following studio facilities:
 1. Two or more independently attenuated microphone channels and microphones.
 2. Two separately attenuated phonograph channels, or a single attenuated channel employing instantaneous switching between two phonograph pickups.
 3. One separately attenuated input for one or more remote lines, which may be combined by means of instantaneous switches with one phonograph channel, if two separately attenuated phonograph channels are provided.
 4. Two 75 p.p.m. (positive and lateral) picture and one 33-1/3 r.p.m. (audio) picture pickup may be combined with one 75 r.p.m. unit.
5. Loudspeaker monitoring in all separate control rooms and earphone monitoring in all control locations.
6. Volume indicator on program output.
7. The following technical standards shall be maintained:
 1. Transmitter modulation capability: 95% A. M.
 2. Distortion introduced after microphone or phonograph input: less than 7.5% R.M.S. at 95% modulation measured at 1000 or 4000 cycles per second.

e. Each system shall meet the following standards of performance:

1. Frequency response of system after microphone and charge-graph inputs: flat within plus or minus 2 db or the 400 or 1000 cycle response from 100 to 5000 cycles per second.
2. Carrier frequency stability: plus or minus 50 cycles per second under all operating conditions.
3. Noise and tone interference after microphone: 40 d.b. or more below 95% modulation.

f. Each member shall keep an operating log and record in it the following information on each transmitter operated:

1. The times when and date the carrier and modulator are on and off.
2. The plate current of the final r.f. stage measured at weekly intervals.
3. The carrier frequency as measured at daily intervals if transmitter is self-excited and located at the station; or at weekly intervals if the transmitter is self-excited and remotely located; by a method approved by the Technical Manager.
4. Reasons for interruptions of service.
5. Log shall be retained for a period of 2 years.

BUSINESS CODE

1. Each Member shall abide by the terms of any contract signed on behalf of IBS, with the approval of the Governing Council, with any advertising representative for the purpose of obtaining sponsored programs for broadcast by the Members.

This shall not be construed as requiring any Member to carry advertising.

2. The Member agrees to contract none of the following types of local or national advertising:

- a. Any advertising statement which the station knows to be false, deceptive, or grossly exaggerated.
- b. Misleading statements of price or value, or misleading comparisons thereof.
- c. Unfair attacks upon competitors, competing products, or upon other industries, professions, or institutions.
- d. Any remedy or other product the sale of which or the method of sale of which constitutes a violation of the law.

3. The Member agrees not to contract the following types of local or national advertising unless specifically approved by the college administration:

- a. Any spiritous or "Hard" liquor.
- b. Any horse racing or gambling enterprise.
- c. Cures and products claiming to cure.

4. No advertising will be acceptable which attempts to directly influence the listener on political or social issues.

5. In news programs, the advertiser or his agent may not exercise any control over the news broadcast. Any contract which includes such a provision will be unacceptable. There will be a distinct separation between news and commercial copy, and no copy tending to disguise a commercial as news will be acceptable.

6. The Member will inform the national advertising representative of the Intercollegiate Broadcasting System of any change in scheduled nationally sponsored commercial programs at least one day in advance. In case of emergencies, notification must be sent within 24 hours.

7. The books of the Member station must be audited once a year by a Certified Public Accountant or by an individual authorized by the college administration. The station will make the auditor's report available to the Business Manager of the IBS or his representative on request. All information will be held in strict confidence by the Governing Council.

ON THE AIR

radio

IT IS A truism to point out that the future of commercial radio in this country depends on the mettle of the young people who are entering its ranks today. Will the radio executives of tomorrow be possessed of the "huckster" complex? Or will they be convinced of radio's tremendous cultural and educational potentialities? Beginning our investigations on this subject, we took a look at the Intercollegiate Broadcasting System, one of the most fertile sources today of station managers, program directors, and scriptwriters. This burgeoning network is heard by approximately 100,000 college students from coast to coast; and of the 1500 students who staff its twenty-six stations, about 100 enter professional radio every year. From what we could see, this campus radio network definitely does not produce huckster material.

The Intercollegiate Broadcasting System, formed in 1940, is the brain child of its present Executive Chairman, George Abraham. A little over ten years ago George Abraham, already an ardent radio fan, entered Brown University. He soon discovered a kindred soul in the person of David Borst, now Technical Manager of IBS. Between them they rigged up a low-powered broadcasting station capable of being heard by the whole Brown student community.

The Brown station was received enthusiastically, and the idea of an exclusive campus radio station run by and for the student body quickly took hold. In the next two or three years George Abraham was deluged with requests from dozens of colleges for information about technical matters, programming procedure, legal restrictions, and so forth. It was then that he conceived the idea of a college network capable of exchanging programs and information, and in general coordinating the efforts of campus radio.

From the original thirteen stations which banded together in 1940 to form IBS, the network has more than doubled its size. These stations scattered throughout the country are all of very low power and designed to be heard only by the college community. But despite the limited geographical area which they serve, the members of IBS put on imaginative and finished programs worthy of more powerful and extensive stations.

Most of the IBS transmitters broadcast from 7:00 to 11:00 P.M. The hour from 9:00 to 10:00 is devoted to network pro-

grams, the various outlets being linked by regular AT&T lines, while the remainder of the broadcasting period emanates locally from each station. According to surveys made by IBS, the peak listening time is from 9:00 P.M. on. Before then students are apt to be studying in the library or taking part in some form of extra-curricular activity.

Programs are written, produced, and announced by students; and students take care of all the technical details concerned with transmission. Though all this work is done on a voluntary basis, there is still a lot of money needed to keep the network functioning. Financing is accomplished partly from student activity funds and partly from commercial advertising revenue. Local and national firms buy time on campus stations as they buy space in campus newspapers. IBS is a non-profit corporation, however, advertising revenue being invested immediately in better programs.

Serious music is one of the main ingredients in the daily schedules of campus radio stations. Whenever possible, "live" musical shows are programmed in cooperation with the college music departments. Recently the station at Cornell University, WVBR, broadcast a local concert series,

which included "name" artists like Marian Anderson. But undertakings of this order are usually balked by the musicians' union requirements. Ordinarily, the "live" music broadcast by IBS member stations comes from small instrumental groups made up of talented students.

Most important of the musical programs broadcast regularly by the campus network is "IBS Music Hall," heard every Thursday evening at ten o'clock. A well balanced program of records is selected, and an announcer's script sent to each member station. These scripts, written by IBS Music Director Alan Rich, are a distinct improvement over the usual commentary encountered on recorded music programs. They presuppose intelligence and maturity in the listener, and talk about music rather than around it.

Before a campus station can become a part of the IBS chain it must satisfy a number of requirements. Each station, for instance, must have two record turntables and must limit breaks between record sides to not more than five seconds. IBS Program Director David Linton believes that campus stations have developed the art of record playing to a degree not approached by the ordinary commercial station.

This network of college stations, limited by small budgets and the edicts of the musicians' union, cannot accomplish all they would like to in programming serious music. But their musical efforts are always in excellent taste and absolutely devoid of Philistine commercialism. IBS alumni who graduate into the ranks of commercial radio should prove potent antidotes to the hucksters.—R.G.

STUDENTS BROADCAST A RECORD PROGRAM FROM A CAMPUS STUDIO.



INTERCOLLEGIATE BROADCASTING SYSTEM

COLLEGE RADIO PAYS OFF

Campus Stations Now Serve As Industry's Long - Sought Personnel Training Ground

College Web Sending 100 Staffers Yearly Into Industry

NEW YORK, Jan. 11.—Intercollegiate Broadcasting System, operating as a network since 1940, has been quietly and unostentatiously developing a raft of professional radio people in all categories—engineers, announcers, station managers and actors. Check of IBS' statistics, which are significant to broadcasters in view of the repeated complaints that radio has no proving grounds, indicates that the college network uses about 1,500 students on its various stations currently, with personnel averaging about three to four hours of radio work a week. Larger campus stations, such as those at Columbia University, Harvard, Brown and Swarthmore, may each use as many as 100 people in various station operations. Yearly, some 300 to 400 students are graduated by colleges in the IBS web. Of these graduates, some 100 enter professional radio, according to David Linton, IBS program manager.

While IBS has not been operating long enough to produce many men who have landed in top radio positions, a checkup of the alumni shows many who have filtered into solid radio posts thruout the country. A gander at the following is illustrative:

Typical Examples

Tom Wertenbaker, formerly manager of WPRU, Princeton University, is now assistant manager of WNBH, New Bedford, Mass.; Bill Hutchins, who resigned the equipment for WKRC, Columbia University station, and subsequently did research for Major Armstrong, now is manager of WFNH, new FM station in New Bedford, Mass.; John Merriman, one-time program director of WXPB, University of Pennsylvania, is now on the CBS news staff; Jean Williams, formerly program director at WSNR, Swarthmore, is now a copywriter at N. W. Ayer; Grant Theiss, one-time manager of WPRU, Princeton, is in CBS spot sales; Powell Ensign, Brown, is connected with J. P. McKinney, station reps; Ann Pike, who was program director at Swarthmore, is a scriptwriter at WOSU, educational station at Ohio State; Allyn Moss, a student at IBS' station at Antioch College, Yellow Springs, O., is a director at WNYC, New York City's municipal station; Frances Hill, once at Swarthmore, is

now women's director at WILM, Wilmington, Del.

Others are Rick Caro, who got in his first licks at WVBR, Cornell, is a control operator at SHCU, Ithaca, N. Y.; Walter Scott, formerly actor and announcer at IBS Columbia University station, is now doing news for General Electric at Schenectady, N. Y.; Hilda Simms, who was faculty adviser at IBS' station in Hampton Institute, was recently seen in the Broadway legit, *Anna Lucasta*; Alan Rich, IBS music director, also does an announcing stint for WJNY, Watertown, N. Y.; Bill Weston, formerly at Brown, is an announcer at WCFI, Pawtucket, R. I.; James Sondheim, Columbia, now is in CBS research; Bill Wise, another Columbia University radio man, is in the CBS newsroom; Myron Curry, Brown, is now continuity director at KMBC, Kansas City, Mo.; Bill Saunders, also a one-time Brown man, is chief announcer at WIRY, Troy, N. Y.; and Don Stix, another IBS alumnus, is a transmitter engineer at WNBC, NBC's key outlet in New York.

Technical Staffers, Too

In addition to station men, IBS develops personnel for radio manufacturers and research groups. For instance, Paul Yergin, former manager of UCRS, Union College, is a member of the scientific staff of Columbia University's radiation laboratory; Howard Tomkins, one-time manager of WSNR, Swarthmore, is now with the Philco research staff; Gordon Graham, who practiced his electronics at Brown, is with Western Electric in Baltimore; and Martin Sherron, former chief engineer at Columbia University, is director

of research at Sherron Electronics Company, Brooklyn, N. Y.

Personnel listed above is only a fraction of former IBS men now operating in stations and other facets of the radio business. From talks with both IBS and standard radio men, it appears the lads who broke into radio via the college network have an advantage over other newcomers in that they have learned the groundwork of the business by trial and error and have gained an insight into many phases of actual station operation.

IBS, which is now making a renewed pitch to agency time buyers stressing the advantages of the school network's coverage of students, currently has 53 stations. Another 24 stations hold auxiliary memberships and are in the "trial" classification. Another four are affiliates which serve as programing outlets, having no facilities but operating workshops. IBS audience, estimated at 100,000, is reached via a "limited-area coverage" system, with the signal limited to campuses in order to avoid interference with other frequencies. Programs are fed via wire lines to specific listening locations, such as dormitories and fraternity houses.

INTERCOLLEGIATE

BROADCASTING

SYSTEM





INTERCOLLEGIATE
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507 FIFTH AVENUE, NEW YORK 17, N. Y. MUrray Hill 2-8288

6 August 1947

We are enclosing, for your information, an important statement on the subject of low-power broadcasting issued last week by the Federal Communications Commission. You will note that while the Commission emphasises the necessity for competent engineering supervision and measurement of low-power radio devices, it refers to our stations (see page 3, underscored section) as examples of the correct operation of this type of equipment.

The Intercollegiate Broadcasting System pioneered in the development of low-power carrier-current broadcasting more than ten years ago and maintains engineering research in this field on a continuing basis. During this active decade IBS has represented the interests of the amateur campus station in hearings - both formal and informal - before the Federal Communications Commission. Thus campus stations have enjoyed the full cooperation of the F.C.C. Furthermore, IBS is now working with the Commission in the revision of the rules governing carrier-current broadcasting. It is expected that the revised rules, setting up more definite licensing procedures for this type of service, will be formulated in the next few months.

We feel that many colleges may be considering this form of radio and we are anxious that they should be fully acquainted with the law. The regulations are not so stringent as to make operation impractical, but they suggest that competent advice and supervision are necessary.

Sincerely yours,

Russell Potter

Russell Potter PhD.
President

Board of Directors

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FEDERAL COMMUNICATIONS COMMISSION
Washington 25, D.C.

NEWS RELEASE
10097
July 28, 1947

COMMISSION INVESTIGATING "WIRED-WIRELESS" OPERATIONS;
USERS SUBJECT TO REGULATIONS TO PREVENT INTERFERENCE

The Commission is investigating reports that some individuals and groups have begun, or plan, "wired-wireless" broadcast service over local power lines.

Indications are that the necessary equipment is being supplied by firms or agents with the mistaken assurance that this type of operation does not come under Commission jurisdiction. There is further indication that the operators, also, are not familiar with Commission requirements.

This use is not covered specifically by the Communications Act or the Commission's rules and regulations. However, it is subject to Sections 2.101 to 2.104 of the latter, which govern the operation of low-power radio frequency devices intended for control rather than for broadcast purposes. These sections specify maximum power and range for such devices if they are to be excepted from the licensing procedure.

There is no provision under the low-power rules which countenance the establishment of a station comparable to presently authorized broadcast stations. By no stretch of the imagination can it be interpreted that the Commission intended low-power devices to be converted into stations for communicating through space by radio, employing call letters selected at random, operating on frequencies assigned to the standard broadcast band, and broadcasting commercial announcements.

Instances where the potential purchaser has been assured by the distributor or manufacturer that a certain low-power device conforms with the established rules have been brought to the attention of the Commission. While this unconventional practice may exist, it does not relieve the owner or operator of the responsibility for determining that the Commission's requirements are fulfilled.

Unlicensed radio operation, which normally results when low-power devices exceed the limitations provided, creates a definite menace to important communications and may subject the operator to serious penalties provided for in the Communications Act, including a maximum fine of \$10,000 or two years imprisonment, or both.

Though readily understandable to technicians, the requirements of low-power operation are difficult to explain to the layman. In general, a device does not require Commission authorization if it is intended primarily for control purposes at short distances and the radiated energy does not exceed 15 microvolts per meter at a distance less than lambda over two pi or 157,000 feet divided by the frequency of operation in kilocycles. Taking the present broadcast band, this means that the maximum allowable field intensity is 15 microvolts per meter within the range 98 to 285 feet.

(over)

However, even if a low-power radio frequency device is exempt to licensing it must nevertheless conform to certain technical requirements in order that its emissions not interfere with the regular radio services. In other words, its emission must be measured expertly to make certain that there is no interference. A device may be lower in power than is prescribed for licensing yet be capable of radiating into bands used by broadcast, safety, Government and other services. To prevent this, the device must be measured as follows:

Calibrated field intensity measuring equipment must be set up at the maximum distance allowable for the frequency in use and the readings shall be recorded. If the power line is being used as a radiator, the point of highest signal strength along the line shall be selected and the maximum distance figured from this point. To determine the location of the strongest signal along the power lines it will be necessary to conduct observations on a suitable receiver while encircling the location of the transmitting unit.

The Commission prescribed the existing rules to permit careful regulation of low-power radio frequency devices which, if allowed to attain widespread unregulated use, would cause intolerable interference to authorized radio services. Inasmuch as field intensity measurement equipment is not generally available, users of such apparatus frequently operate under the assumption that because of the low power involved no interference will result. They further reason that as long as interference is not caused to radio reception the operation of this type of equipment is permissible regardless of the fact that the field intensity may be much greater than 15 microvolts per meter beyond the defined maximum distance. It will be realized that equipment in this category, if coupled to radiating antennas or to local power supply lines, will achieve a field intensity far in excess of that allowed.

As originally conceived, the rules provided for the use of low-power radio frequency devices for control purposes. The control device employs a conventional house lighting circuit to provide a link between the transmitter device and the unit to be controlled. The apparatus generating the electro magnetic field must always be operated at a distance less than 157,000 feet divided by the frequency of operation in kilocycles from the unit to be controlled. For example: At 1000 kilocycles, in the middle of the standard broadcast band, the maximum distance of operation should not be greater than 157 feet. When the radiation from low power radio frequency devices exceeds the calculated maximum distance permissible, the equipment assumes the status of an unlicensed transmitter and the owner and operator are subject to the penalties provided in the Communications Act.

The responsibility of assuring that the radiated energy does not exceed the limitations specified lies with the owner and operator of the equipment. Therefore, it is to their advantage to arrange for a competent engineer to provide exact field intensity measurements prior to any extensive

use of low power devices. For example: While the so-called "campus radio" of the Intercollegiate Broadcasting System, which is confined to the individual wired precincts of more than 50 schools and colleges, is not licensed, its operators see that it conforms to FCC low-power rules.

Even though low power is employed, equipment of this type may be accidentally or intentionally coupled to radiating antennas or power supply lines so as to interfere with radio reception. In this respect the interference may well be caused by harmonics rather than on the fundamental frequency.

Of course, if a control device is to be operated over distance or with greater power than those specified, it is necessary to first obtain a license from the Commission. Licenses are issued without cost, and application forms may be obtained from any Commission field office, or by writing to the "Secretary, Federal Communications Commission, Washington, 25, D.C." Likewise, the Commission and its field offices will be glad to answer any inquiries concerning use of low-power devices.

Licenses may be granted to operate radio control devices on certain frequencies within the band 27.430 to 27.480 megacycles shared with the Industrial, Scientific and Medical Service; and also within the Citizens Radio Service band 460-470 megacycles. At this time, operation of these devices would be under the terms of experimental licenses.

Amateur radio stations may also be used for transmitting signals to receiving apparatus in connection with the control of remote objects such as model aircraft. This is provided in Section 12.101 of the rules governing amateur operation. However, an amateur station used for this purpose must be operated by a licensed amateur radio operator on frequencies assigned for the use of amateur stations.

OUTLINE OF THE PURPOSES AND ACTIVITIES OF THE
INTERCOLLEGIATE BROADCASTING SYSTEM

- I. Encouraging cooperation among campus radio stations
 - A. Holding meetings of member station personnel
 - B. Helping stations keep in touch with each other
 - C. Establishing regional organizations
- II. Acting as clearing house for information concerning campus radio
 - A. Providing information for Members
 - B. Providing information for Trial groups
 - C. Providing information for colleges interested in starting campus stations
 - D. Providing information to the FCC and similar agencies
 - E. Providing information to national advertising representatives and potential sponsors
 - F. Providing information to the general public, and others
 - G. Collecting information needed for A to F above
- III. Acting on behalf of the Members collectively
 - A. Representing the needs of campus radio to the FCC and similar agencies
 - B. Representing the members to music licensing agencies
 - C. Representing the members to a national advertising representative
 - D. Representing the members to sources of program material
- IV. Establishing standards for the setting up and operating of campus stations
 - A. Requiring approval of college administration for acceptance in Trial Status
 - B. Requiring acceptable transmission system for admission to Member status
 - C. Requiring minimum facilities for admission to Member status
 - D. Establishing codes of operation for campus stations and the organizations operating them.

This list is not necessarily complete, and does not indicate the relative amounts of effort or importance attached to the various items. Neither does it indicate the considerable auxiliary detailed work necessary to the achievement of the above aims.

INTERCOLLEGIATE BROADCASTING SYSTEM

507 FIFTH AVENUE, NEW YORK 17, N. Y.